NON-PUBLIC?: N
ACCESSION #: 8711190198
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Beaver Valley Power Station Unit 2 PAGE: 1 of 2

DOCKET NUMBER: 05000412

TITLE: Turbine Trip/Reactor Trip Due to Erratic Main Feedwater Regulating Valve Operation
EVENT DATE: 10/15/87 LER #: 87/029/00 REPORT DATE: 11/16/87

OPERATING MODE: 1 POWER LEVEL: 065

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: W. S. Lacey, Plant Manager TELEPHONE #: 412-643-1258

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: SJ COMPONENT: FCO MANUFACTURER: W120
REPORTABLE TO NPRDS: Y

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On 10/15/87 at approximately 1514 hours, with the Unit at 65% reactor power, erratic operation of all three main feedwater regulating valves (MFRV) was experienced. The operators took manual control of the "A" and "B" MFRVs to attempt to restore control. Level stability could not be achieved because adjustment of one MFRV caused adverse responses on the other feedwater lines. At 1515 hours, the level in the 21A Steam Generator increased to 75%, causing a Turbine Trip. Since reactor power was above the P-9 Protection interlock (49%), the turbine trip initiated a reactor trip. The operators stabilized the plant in HOT SHUTDOWN utilizing the Emergency Operating Procedures. The cause for this event was the over-responsiveness of the MFRVs to small level changes in the steam generators. Instrument and Control personnel were called in to adjust the electronic gains within the MFRV controllers. As a permanent corrective action, the response times of the MFRVs will be adjusted to allow stable level control of the steam generators. There were no safety implications to the public as a result of this event. This event has been previously analyzed in FSAR Section 15.1.2, "Feedwater System Malfunctions Causing an Increase in Feedwater Flow". This event is being reported in accordance with 10 CFR 50.73.a.2.iv as an event involving an automatic actuation of the Reactor Protection System.

(End of Abstract)

TEXT: PAGE: 2 of 2

On 10/15/87 at approximately 1514 hours, with the Unit at 65% reactor power and increasing to full power operation, the operators noticed feedwater flow perturbations on the 21A and 21B Steam Generators (SG). Approximately 15 seconds later, feedwater flow perturbations were also noted on the 21 SG. The operators noted the "A" and "B" Main Feedwater Regulating Valves (MFRV) (2FWS*FCV478 and 488) oscillating over the full range of travel. The operators immediately took manual control of these valves to restore control. Level stability of the SGs could not be restored because adjustments to one MFRV caused adverse responses in the other two feedwater lines and SGs. At 1515 hours, the level in the 21A SG increased to 75% (P-14 Protection Interlock) initiating a Feedwater Isolation and a Turbine Trip. Since reactor power was greater than the P-9 Protection Interlock (49%), the Turbine Trip initiated a Reactor Trip. The operators utilized the Emergency Operating Procedure to stabilize the plant in Operating Mode 3 (HOT SHUTDOWN).

The cause for this event was attributed to the over-responsiveness of the MFRVs to small level changes in the steam generators. Instrument and Control personnel were called in the "de-tune" (reduce the gain) the MFRV controllers. As a permanent corrective action, the response times of the MFRVs will be adjusted (valve travel time will be increased) to allow stable level control of the steam generators.

There were no safety implications to the public as a result of those event. This event has been previously analyzed in FSAR Section 15.1.2, "Feedwater System Malfunctions Causing An Increase in Feedwater Flow". The P-14 Protection Interlock performed as designed to initiate a feedwater isolation and a turbine trip on a high steam generator water level condition, to prevent the entry of water into the main steam lines, and moisture carryover into the turbine.

This event was reported to the Nuclear Regulatory Commission in accordance with 10 CFR 50.72.b.2.ii and this report is being written in accordance with 10 CFR 50.73.a.2.iv, an event that results in the automatic actuation of an Engineered Safety Features (ESF) or Reactor Protection System (RPS).

Two similar events involving the main feedwater regulating valves which resulted in reactor trips are reported as LERs 87-023-00 and 87-026-00.

ATTACHMENT # 1 TO ANO # 8711190198 PAGE: 1 of 2

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November 16, 1987
ND3SPM:0091

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
LER 87-029-00

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

In accordance with Appendix A, Beaver Valley Technical Specifications, the following Licensee Event Report is submitted:

LER 87-029-00, 10 CFR 50.73.a.2.iv, "Turbine Trip/ Reactor Trip Due to Erratic Main Feedwater Regulating Valve Operation".

Very truly yours,

/s/ Wm S. Lacey
Wm. S. Lacey
Plant Manager

tlu

Attachment

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